

Highjoule Launches 1MW Solar Folding Container Project in Guinea

Highjoule successfully deploys 1MW off-grid photovoltaic storage system in Guinea using innovative solar folding containers, providing sustainable energy for remote mining operations.



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In the scorching sun of **Guinea in West Africa**, a vast bauxite mining camp has long been plagued by the lack of municipal electricity due to its remote location. Nowadays, this energy predicament has been successfully resolved by innovative wisdom from China. **Highjoule**, with its globally leading photovoltaic folding container integrated solution, has successfully deployed an off-grid photovoltaic storage system with a total capacity of **1MW** here. It is like bringing five “super power banks” that can be charged at any time to the camp. With its outstanding flexibility, stability and economy, it has injected lasting and green energy into the production and life of the mining area.

Challenges and Innovation: Creating Infinite Possibilities within Constraints

The project is located in Guinea, which boasts abundant solar energy resources. The annual total horizontal radiation exceeds **2010 kWh/m²**, making it one of the “A-level” regions with the richest solar energy resources. However, the camp not only has no access to the municipal power supply but also faces the severe challenge of extremely limited construction land. Traditional fixed photovoltaic power stations cannot play a role here.

[Highjoule](#) precisely targeted the pain points and brought a revolutionary solution – **five sets of 200kWp photovoltaic folding containers**. This highly integrated product integrates high-efficiency photovoltaic modules, inverter systems, MPPT controllers, and auxiliary traction equipment all into a standard 40-foot high cabinet, with a protection level as high as **C4**, and is specially designed to cope with harsh industrial and Marine environments. When power generation is needed, the containers unfold like “Transformers”, exposing large areas of photovoltaic panels to capture sunlight. In case of bad weather or when relocation is required, it can be quickly folded and retracted, and moved as a whole, perfectly adapting to the possible relocation needs in the mining area and achieving “**plug and play power**”.

Core configuration: The stable core of smart energy

To ensure **24-hour uninterrupted power supply** to the camp, this project has built an integrated photovoltaic and storage smart microgrid:

Power generation unit: 5 sets of [206.4kWp photovoltaic folding containers](#), with a total installed capacity of **1032kWp**, maximizing the utilization of abundant sunlight.

Conversion and control unit: Equipped with 10 100kW off-grid photovoltaic inverters, featuring built-in **MPPT (Maximum Power Point Tracking)** technology, it always keeps the photovoltaic system in the most efficient power generation state.

Energy storage and backup unit: Equipped with 10 [215kWh energy storage cabinets](#), it functions like a huge “green battery”, storing the surplus electricity during the day to ensure a stable and worry-free power supply for the camp at night or on rainy days.

Outstanding advantage: Redefining the value of distributed energy

Compared with traditional photovoltaic power stations, the Highjoule project highlights its all-round advantages:

Ultimate savings and flexible deployment: The modular design enables a “seamless” deployment,

with five containers arranged in two or three rows, greatly saving precious land resources and solving the most core pain point of the project.

Cost reduction and efficiency improvement, operation and maintenance revolution:

Maintenance-free design and high integration have reduced the failure rate by **more than 50%**, and the annual operation and maintenance cost has plummeted to **30%-50%** of that of traditional fixed brackets. The components can be folded as a whole for cleaning without the need for climbing, saving **40% to 60%** of labor costs and significantly enhancing safety and convenience.

Flexible expansion and efficient investment: The system supports rapid power expansion from **10kW to 1MW**, perfectly meeting the needs of phased construction. Although the initial investment is slightly higher, the combined benefits of power generation gain (**5%-15%**) and land savings can shorten the investment payback period to an astonishing **0.4-1 year**.

Unbreakable and fearless of challenges: The design fully takes into account the extreme weather conditions in Guinea, such as tropical storms, strong winds, and sandstorms. The folded state can effectively resist natural disasters and protect core assets. The box body is made of galvanized steel or composite materials, which have extremely strong corrosion resistance. The system service life can be extended to **over 30 years**, far exceeding the traditional solution.

Profound significance: Chinese technology empowers the global energy transition

The successful operation of the [Highjoule 1MW](#) project in Guinea not only solved the electricity problem of a specific mining area but also has extensive demonstration significance. It has demonstrated to the global market that in special scenarios such as no electricity, power shortage, limited land and harsh environment, China's innovative "**photovoltaic +**" solution possesses unparalleled adaptability and strong vitality.

This move marks a solid step forward for Highjoule in its global strategic layout and the application of cutting-edge products, fully demonstrating its core values of "**customer-centered and innovation-driven**". In the future, Highjoule Technology will continue to focus on modular and integrated intelligent photovoltaic energy storage systems, providing clean, reliable and efficient energy security for more remote areas, mining areas, islands and emergency sites around the world, and lighting up every corner of the world with Chinese wisdom.

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